目的　应用Sprague-Dawley大鼠建立慢性牙周炎（chronic periodontitis，CP）与IgA 肾病（IgAN）复合的动物模型，探讨分析两种疾病是否有关联并初步研究其可能的机制。　方法　将80只健康雄性SD大鼠随机分为4组：正常对照组（A组）、IgAN组（B组）、CP组（C组）和CP＋IgAN复合组（D组），每组20只。CP模型建立采用大鼠双侧上颌第二磨牙接种特异性牙周炎致病菌标准株+牙颈部丝线结扎，IgAN模型建立运用牛血清白蛋白灌胃（BSA）+注射脂多糖（LPS）+四氯化碳（CCl4）方法。建模后第8周、12周末各处死10只大鼠。观察指标包括蛋白尿、肝肾功能、肾组织病理、牙周病理及改良出血指数（MBI）。　结果　成功建立CP和IgAN动物模型。第8周末时D组Scr、BUN显著高于A、B、C组（均P＜0.05），A、B、C 3组间差异无统计学意义；至12周末时B组、D组Scr、BUN显著高于A组，而D组又显著高于B组，差异均有统计学意义（均P＜0.05）。第8周末时B、C、D组24 h尿蛋白量显著高于A组（均P＜0.05），至12周末时D组24 h尿蛋白量显著高于B、C组（均P＜0.05）。肾脏病理结果显示，第8周末B、D组大鼠肾小球偶见轻度系膜增宽、肾间质有轻度纤维组织增生，D组明显重于B组，均出现不同程度肾小球局灶系膜增殖硬化，至12周D组肾小球系膜显著增宽，局灶节段性硬化，伴炎细胞弥散或灶性浸润。12周末时肾脏PAS染色评分B、D组显著高于A组（P＜0.01），且D组高于B组（P＜0.01）；C组与A组差异无统计学意义。牙周病理显示，C、D组MBI评分显著高于A、B组，D组显著高于C组（P＜0.01）。　结论　本复合模型可在12周用来观察研究慢性牙周炎与IgAN的生化、病理改变并观察其相互关系，本研究观察到慢性牙周炎可能通过慢性炎性机制促进IgAN肾脏病理损伤。

"/> Objective　To analyse the relationship and mechanism between chronic periodontitis (CP) and IgA nephropathy (IgAN) by establishing animal model of chronic periodontitis and IgA nephropathy in SD rats.　Methods　Eighty health male SD rats were divided into four groups, control group (A, n=20), IgAN group (B, n=20), CP group (C, n=20), CP accompanied with IgAN group (D, n=20). CP model was established by ligating silk suture and besmeared pathogenic bacterium in rats dental cervix. Experimental IgAN model was established by lavage of bovine serum albumin (BSA) and injection of lipopolysaccharide (LPS) and carbon tetrachloride (CCl4). Ten rats were sacrificed in every group at the end of week 8 and 12. The blood, urine, kidney tissue samples were examined. The observation index included proteinuria, kidney and liver function, renal tissue pathology and periodontal tissue pathology. The data were statistically analysed.　Results　Animal models were established successfully. The levels of Scr and BUN in group A, B, C were not obvious difference, but that in group D was higher than the other third groups at 8 weeks ($P<0.05$). The levels of Scr and BUN in group D and group B were significantly higher than that in group A, meanwhile that in group D was significantly higher than that in group B at 12 weeks($P<0.05$). The levels of 24 h urine protein in B, C, D groups were higher than that in group A at 8 weeks($P<0.05$), but at 12 week, that in group D was higher than that in group B and C ($P<0.05$). At 8 weeks, glomeruli had little mesangial broadening and renal interstitium had mild hyperplasia of fibrous tissue in group B and D, and that in the group D significantly was heavier than that in group B. The focal varying degrees were glomerular mesangial proliferation hardening, glomerular mesangial broadening, focal segmental sclerosis, and diffuse or focal inflammatory cell infiltration in D group at the end of week 12. The score of PAS between group A and group C had no statistical significance. The scores of PAS in group B and D were higher than that in group A ($P<0.01$), and that in group D was higher than that in group B ($P<0.01$). Obvious inflammation of periodontal tissue was observed in group C and D, and modified sulcus bleeding index (MBI) were higher than that in group A and B, and MBI in group D was significantly higher than that in group C ($P<0.01$).　Conclusions　The model can be used to research the change of biochemistry and pathology and observe the relationship between chronic periodontitis and IgAN. This study shows that there is relationship between chronic periodontitis and IgAN. Chronic periodontitis maybe make more serious pathology damage in kidney by inflammation mechanism. "/>

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慢性牙周炎与IgA肾病复合动物模型的建立及相互关系

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Establishment of composite animal model of chronic periodontitis and IgA nephropathy, and the interrelation

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